Use It or Lose It

Optimizing "Cash On Hand" in a Defense Working Capital Fund Organization

MARK LEWIS

As clearly illustrated in David Breslin's "Opportunities for Working Capital Fund Organizations and Their Customers," published in the May-June 2002 issue of *Program Manager*, organizations financed by the Working Capital Fund (WCF) often have trouble deciding *when* to spend their discretionary money. Their typical dilemma: should we invest in that equipment, that facility, or those computers *now*—or should we wait six months?

Everybody's Right

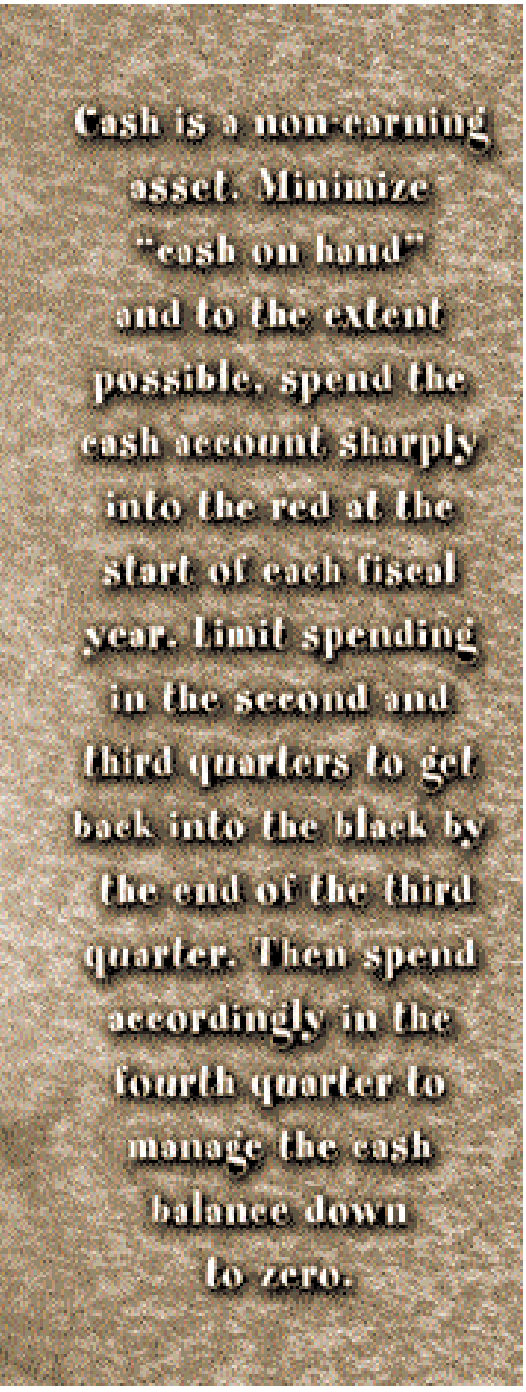
Conservatives will want to wait until the end of the fiscal year to make sure the expected revenues arrive. Contracting officers may feel more comfortable awarding contracts in the first or second quarters of each fiscal year. Aggressive money managers will want to spend it all on Oct. 1. Each opinion has merit, but the management style of the organization's leaders will determine the timing. Because conservatives abound throughout DoD, this article explores the poorly understood *aggressive approach*. Hopefully some of you will convert.

Show Me the Money

Cash is the most liquid form of assets. In most settings, people understand "Cash on Hand" to be the balance of the organization's cash account—highly liquid assets directly controlled by the organization to facilitate day-to-day oper-

Lewis is currently an engineer participating in the Commander's Development Program at Naval Sea Systems Command (NAVSEA), Washington Navy Yard. He holds a master's degree in Business Administration and graduated from Harvard Business School's "Program for Management Development." He is also a graduate of the Advanced Program Management Course (APMC 01-2), Defense Systems Management College. Contributing his statistical analysis expertise to the article was George Lopez, Naval Sea Systems Command, Fallbrook, Calif.

ations. Working Capital Fund organizations don't have stacks of $100 bills stashed in wall safes, but on the books they still have cash accounts, with cash being generated each day from overhead. While cash is necessary in almost all business environments, the cash balance (or stated differently "the cash on hand") is to be minimized since cash is a "non-earning" asset. Its rate of return to the organization is zero at best, while high rates of inflation can significantly reduce its value. To best use your cash, convert it as quickly as possible into revenue-generating facilities, equipment, or other forms of less liquid assets.



More Aggressive Cash Management = More Efficient Cash Management

Optimizing the amount of cash on hand is simply a cash flow exercise: forecast expected monthly cash receipts and then subtract expected monthly cash payouts. If this value (i.e., the balance of the cash account) is expected to remain positive throughout the year, convert the excess cash into working assets. In the private sector the theoretical goal is to keep the cash balance as close to zero as possible, while staying positive to avoid expensive short-term external financing. Most organizations should hold only the minimum amount of cash needed in the short term.

In practice, management sets the minimum cash balance at a level below which they do not wish to fall. This "safety stock" reduces the organization's risk should unexpected opportunities or problems arise. Under conditions of relative certainty (like in the DoD), managers reduce the level of "safety stock" to make more cash available for operations or investments. During periods of increased uncertainty, we increase "safety stocks" to deal with contingencies.

More *aggressive* cash management (i.e., dramatically more spending early in the fiscal year) equates to more *efficient* cash management.

Crunch, Crunch, Crunch..

Figure 1 might represent the cumulative monthly revenue (inflation adjusted) for a typical WCF organization over six years. These data show a predictable revenue pattern, especially considering the uncertainty associated with Continuing Resolution Authority.

Let's say the Command policy is to generate cash at 3.5 percent the rate of revenue. Therefore, monthly cash generation (i.e., "cash receipts") can be determined. Figure 2 on the next page, again, shows a predictable trend where statistical regression provides the best-fit curve:

$Y = 5383.4X + 230.3X2$; where y is thousands of dollars, and x is month (i.e., 1 to 12); the coefficient of determination is 0.996.

FIGURE 1. Cumulative Inflation—Adjusted Fiscal Year Revenue (Month Ending)

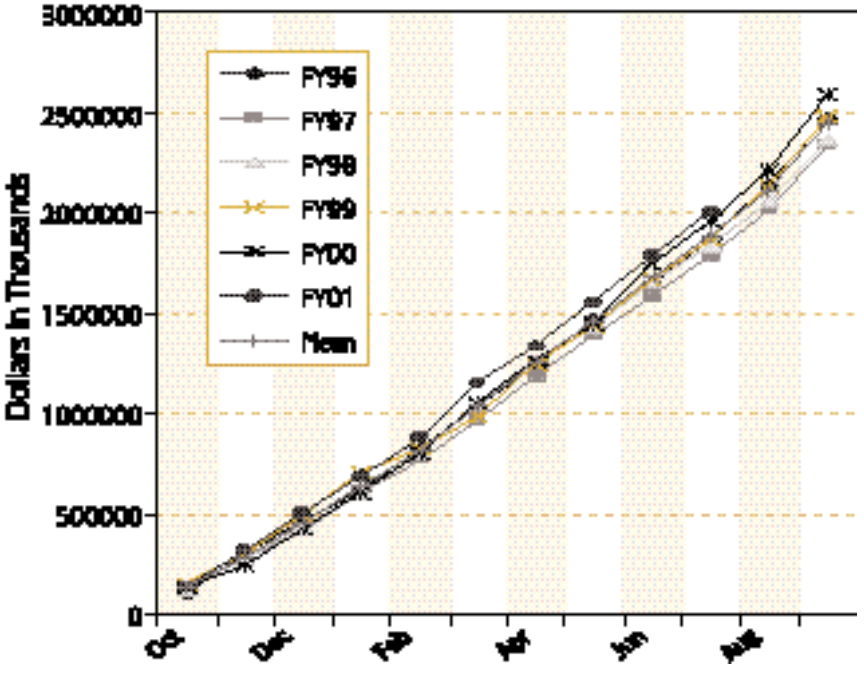
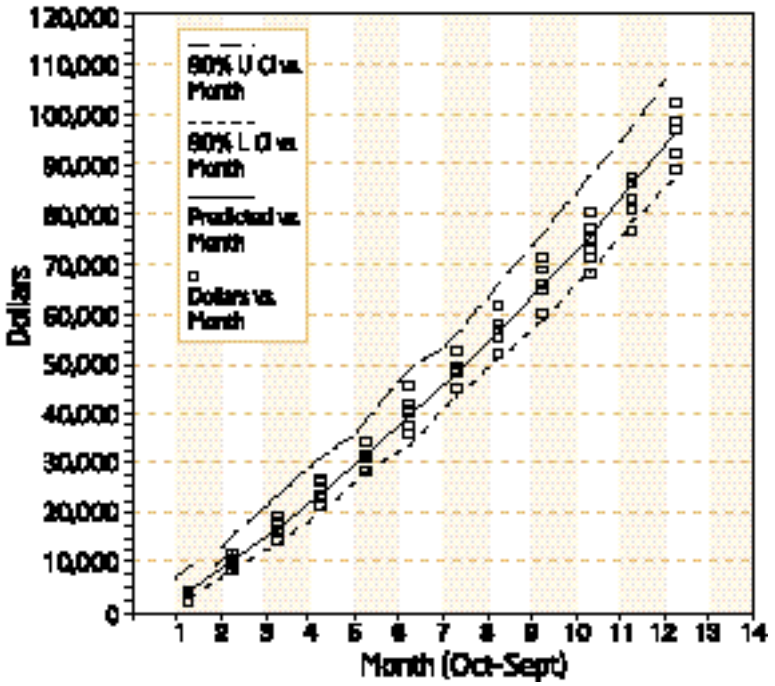


FIGURE 2. 90 Percent Confidence Interval for Cumulative "Cash Receipts" (In Thousands of Dollars)



The key to efficient cash management is the Working Capital Fund, which effectively provides you *free loans throughout the fiscal year*. This is in contrast to the situation faced by private companies that must pay substantial interest rates on short-term loans and lines of credit if their cash balance is inadequate at any time throughout the year. As explained earlier, private firms want to maintain as close to a zero cash balance as possible without falling below zero. If the WCF is your lender, however, a penalty is incurred if your cash balance is negative at the end of the fiscal year, but it is technically acceptable to operate "in the red" for the prior 364 days. Lacking any financial penalty for keeping a negative cash balance, a WCF organization can optimize its cash by spending as quickly as possible in the first quarter of each fiscal year and then recovering back to a zero balance by the fiscal year end.

The 90 percent Upper and Lower Confidence Intervals (UCI and LCI) are shown in Figure 2. Predicting future "cash receipts" solely from historical data is statistically improper, but you can gain valuable insight about your organization's financial trends through this approach. For example, we are 90 percent sure that at least $86 million in cash will be generated each fiscal year, all other factors being equal. Figure 3 shows the same data, but with 95 percent confidence intervals. We are 95 percent sure at least $84 million in cash will be generated.

Free Money

Private firms hold cash for four reasons: 1) to take advantage of discounts when purchases are made with cash; 2) to maintain a credit rating (lenders prefer to see high liquidity); 3) to take advantage of unexpected business opportunities; and 4) to address emergencies.

Only the last two points are relevant for use throughout DoD, and it can be argued that government bureaucracy delays action on most opportunities into future fiscal years (precluding the need to stockpile cash to address the opportunities). Obviously your WCF organization can hold relatively less cash than private firms can.

Let's say that the analysis of your past "cash receipts" and "cash expenditures" shows that your Command's cash balance (i.e., receipts less expenditures) has historically stayed in the black throughout the fiscal year (Figure 4, p. 75). If your Comptroller was aware of the situation, you might have even been criticized for your inefficient use of funds.

If your Command expects to generate, say, $100 million in discretionary cash throughout the fiscal year, then theoretically you should spend $100 million in the first quarter. Throughout the year, overhead will generate the $100 million in "cash receipts" to cover the cash outlay. In this example, the average cash balance for the year would be on the

FIGURE 3. 95 Percent Confidence Interval for Cumulative "Cash Receipts" (In Thousands of Dollars)

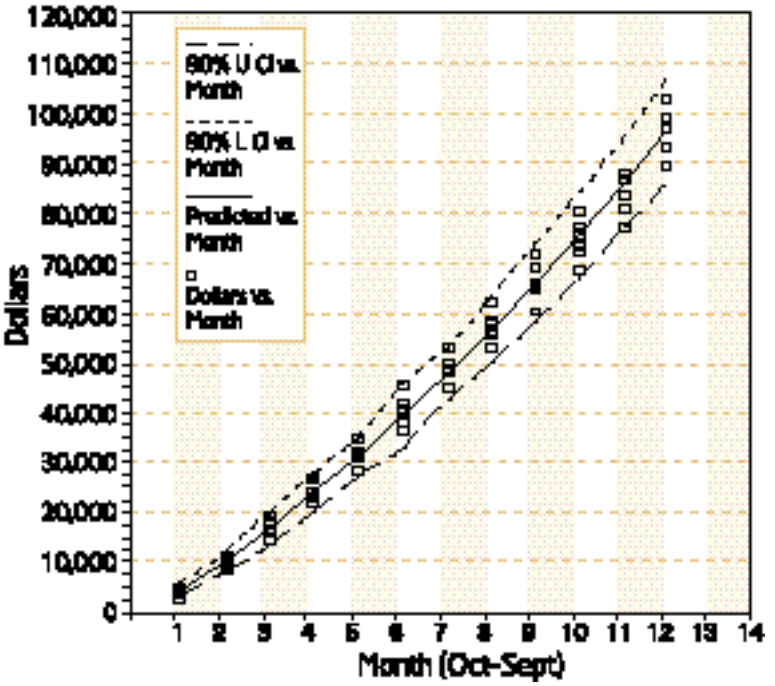
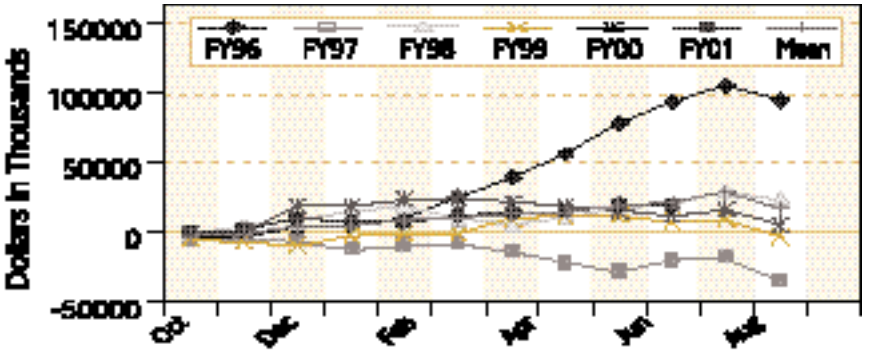


FIGURE 4. Historical Cash Balance



order of -$50 million. Extending this negative cash balance over several years illustrates that you would make significantly more funds available for investments, and perhaps more importantly *you would effectively be taking out a zero-interest $50 million loan from the Working Capital Fund that need never be paid back*.

Of course, this aggressive approach requires excellent forecasts of inflation-adjusted revenue to ensure a zero or positive cash balance by the end of the year. If revenues fall short of forecasts, the fiscal year will end with a negative cash balance. Many organizations will not feel comfortable with this optimized approach.

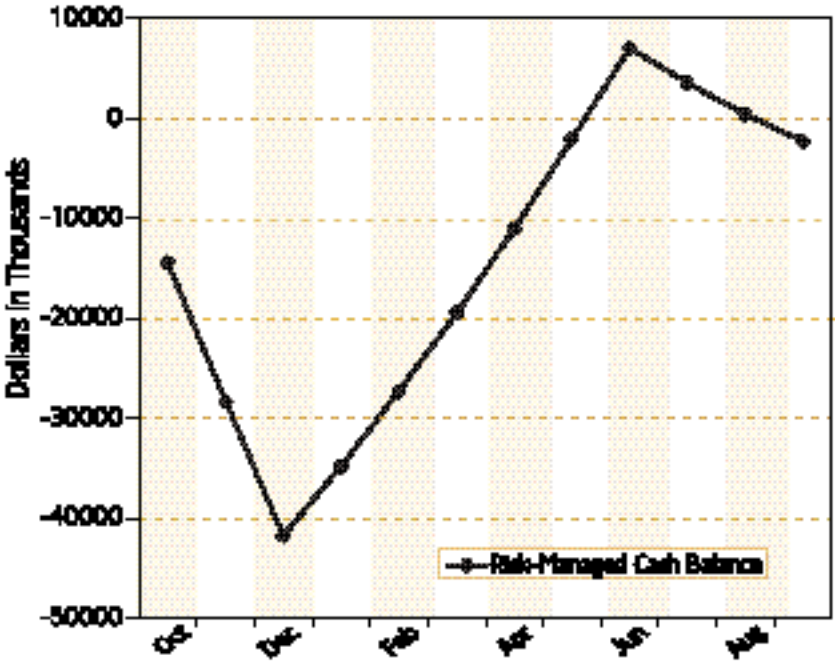
A more moderate philosophy is to spend cash at a somewhat reduced rate in the first quarter (although at a much higher rate than cash is being generated), then stop spending in the second and third quarters to build up a positive cash balance. Spend the remaining cash in the final quarter (Figure 5). This risk-managing approach gives you more control over the year-end financial position, yet still makes better use of cash than does the current practice.

For example, if the cash budget is $100 million for the year then you could spend $60 million in the first quarter. Zero cash outlays in the next two quarters would result in a slightly positive cash balance at the end of the third quarter (around $7 million), and the budget for the fourth quarter would be $40 million. If we assume that future inflation-adjusted revenue will mirror historical revenue, we can plan outlays to be 95 percent sure (or 90 percent sure, or 99 percent sure, or whatever level at which your Command feels comfortable) that we will have a positive cash balance at the end of the third quarter.

In this example, the average cash balance throughout the year is -$10 million to -$20 million. Again, extending this negative cash balance over several years equates to a *zero-interest $10 million loan that your Command does not have to pay back*. Conversely, carrying a positive cash balance throughout the year equates to perpetually loaning out millions of dollars—which the WCF does not have to pay back to *you*.

In a strict financial sense, there are few arguments against adopting the cash-spending policy depicted in Figure 5. Contracting or finance offices, however, might not be able to process the increased workload in the first quarter.

FIGURE 5. Risk-Managed Use of Cash



More aggressive financial policies are more risky, so some risk-averse people will have difficulty accepting the change. Others will resist simply because they do not like change itself. Recognize that many accountants, due to their conservative training, would be less accepting of the new approach than would economists.

Just Do It!

Cash is a non-earning asset. Minimize "cash on hand" and to the extent possible, spend the cash account sharply into the red at the start of each fiscal year. Limit spending in the second and third quarters to get back into the black by the end of the third quarter. Then spend accordingly in the fourth quarter to manage the cash balance down to zero. This more aggressive cash-management philosophy makes more funds available for investment, effectively gives your Command an interest-free loan that you need never pay off, and realizes revenue faster since you will turn cash into revenue-generating assets sooner. Even you risk-averse managers can use this technique by using conservative confidence intervals during your analysis.

Editor's Note: Lewis welcomes questions or comments on this article. Contact him at Lewismr@navsea.navy.mil.